Cerebral Optical Centres.—Dr. S. E. Henschen. (*Extrait de la Revue Générale D'Ophtalmologie*, No. 8, 1894.) Regarding localization and physiological functions of the cortical visual centre, physiologists differ. Munk limits it to the occipital lobe; Luciani and others have extended it to the angular gyrus and even farther; Ferrier and others localize it chiefly in the angular gyrus.

VALUE OF ANATOMICO-PATHOLOGICAL METHOD IN LOCALIZING THIS CENTRE.

In recent years different authors have tried to base their observations on the method of secondary degenerations in animals and man. H. cites an example: Male; blind for fifty years; both eyeballs destroyed, and there was found complete atrophy of the optic tract, considerable atrophy of the external geniculate body, pulvinar, anterior corpora quadrigenima, radiation of Gratiolet, and some atrophy extending to occipital, parietal and temporal lobes. He asks should we then consider that all the fibres are visual, conducting light impressions. We know that destruction of fibres which go to pulvinar, anterior corpora quadrigenima, temporal and parietal lobes does not cause blindness.

Degeneration in the opposite direction in the internal capsule from partial destruction of the occipital lobe is not for that reason to be considered visual fibre degeneration Conclusions based alone on degeneration method are not reliable. Henschen believes that only the anatomico-clinical method can guide in localizing the optical centre. In trying to settle this question only positive cases of hemianopsia have been taken into account. In analyzing negative cases together with the positive, H. believes the optical centre to be limited to the calcarine fissure, but impossible to say which part. The occipital visual tract is located in the inferior part of the optical radiation. Hemianopsia, he says, arises only from a lesion of this fasiculus or of the calcarine fissure, and he has not found one case among those well reported militating *vs.* this theory.

Some have localized the centre in the parietal lobe, but there are many negative cases reported of lesions of this lobe without hemianopsia. The author gives a number of diagrams of regular cases, and calls attention to the fact that the cortical lesion of the parietal lobe causes hemianopsia only when it touches the visual fasiculus in the inferior part of the optic radiation.

A large number of anatomico-clinical facts show that the visual centre is limited to the occipital lobe. H. publishes diagrams of cases where lesions of the median surface have not produced blindness, but adds, cases few and lesions sometimes small.

An analysis of all the cases the author is able to collect convinces him that hemianopsia results only when the lesion involves the calcarine cortex or the optical fasiculus which unites the geniculate body to this part of the occipital lobe.

The exact limitations of the optical centre cannot be as yet definitely settled, but the author has observed one case when the lesion was limited to the cortex of the calcarine fissure and the hippocampus in a very precise manner, and the hemianopsia complete, thrombotic softening limited to the cortex hidden in the depth of the fissure. Microscopical examination showed secondary degeneration of the optic radiation. This case appears to be the only one where a lesion was limited to the cortex of the calcarine fissure.

Can we determine where the macula lutea and pheripheric portions of the visual fields are projected? H. cites a case where the white substance of right hemisphere was almost totally destroyed, together with two and a half centimetres of the occipital part of the calcarine fissure of the left. Patient could read tolerably fine characters up to time of death. We read by macula lutea, hence this would seem to be projected to anterior part of the calcarine fissure.

H. also attempts to localize the superior and inferior part of the visual field. M. Monakow says there is no projection from the eye into the cerebral cortex; a new centre can form of itself if the pheripheral cortical centre is destroyed; the centre then is mobile. In support of this theory analogies exist in the motor and sensory centres. H. meets this theory by asserting that hemianopsia caused by a cortical lesion in the calcarine fissure is not transitory, and claims this is supported by his own case and those of Hun, Déjerine and Wildbrand. H. does not think Monakow's case, which he comments on in detail, upsets in any way his conclusions. ELLIOTT.

Experimental Researches on the Fatigue of the Human Muscles Caused by the Action of the "Nerve Poisons."—C. Rossi. (*Rivisto Sperimentale di Freniatria*, 1894, fasc. iii., iv., page 442.) The experiments were made upon the author himself and his laboratory servant The muscles experimented upon were the flexor digiti medii of both hands. The researches were made in the following manner: A weight, which was uniform for all experiments, was raised (and lowered) every two seconds until the muscle was so tired that the weight could not be raised any more. Every elevation was marked on the "ergograph" of Mosso. Ten minutes after the starting of the first series of muscular contractions another series was started; ten minutes later a third, etc. The experiments were thus conducted during one hour, making seven series for each hand.

The following day repetition of the experiments in the same manner under the influence of the drug, which was taken by mouth or by hypodermatic injection directly before the beginning of the experimenting. In some cases, where the author desired to study the later effects of the drug, the sessions were prolonged to two hours or more.

As criterions served:

1. The mechanical labor performed (sum of single elevations and weight) (*a*) in each single series, (*b*) during a whole session.

2. The number of muscular contractions in one single series. The results attained were:

I. Alcohol, absinthe, caffeine, ether and strychnia increase the resistance to fatigue.

a. Alcohol: Given in a considerable dose (80 grammes of rum), it first increases the resistance to fatigue, but soon (within half an hour) diminishes it. In small doses (25 grammes of rum) it increases the resistance to fatigue, which increase remains stationary as long as one is under the influence of the drug.

b. Absinthe: First highly increases the resistance to fatigue, an effect which lasts only from twenty to thirty minutes, and which gives place to a rapid diminishment. The absinthe acts as a temporary excitant.

c. Caffeine: It increases both the number of contractions in a single series, and the quantity of the total mechanical labor performed. This effect remains stationary as long as the drug acts; it is not followed by a diminishment of the resistance to fatigue. Caffeine must, therefore, be considered as a tonic for the neuro-muscular system.

Camphor: It displays a variety of action; in one person it increases the resistance to fatigue; in others it diminishes it. Its effect will always depend with the dose and the individual.

Strychnia: Increases the resistance to fatigue, which manifests itself not only by the increase of the later mechanical labor, but also by the increased number of single contractions.

II. Atropine and hyoscyamine do not influence the resistance to fatigue in any manner.

III. Bromide of potash, chloral hydrate, duboisine, morphine and opium have a depressing effect, diminishing the resistance to fatigue.